

# SR 500 At Grade Intersection Removal

Value Engineering Study  
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# Team Members

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# Team Objective

Verify or improve upon the proposed design, to eliminate at grade crossings on SR 500 through one or more constructible projects, which can be funded within 10 years, and are staged/phased considering the needs of the area residents and transportation users.

# Proposed Project St. Johns



Urban I/C at intersection of SR 500 & St. Johns  
With SR 500 over St. Johns

# Proposed Project 42nd



Remove access at intersection of SR 500 & 42nd  
Grade separate with 42nd over SR 500

# Proposed Project 54th Ave.



54th over SR 500 with loop ramps

# Recommendation #1

- Build Auxiliary lane to connect 15th on ramp to St. Johns off ramp EB SR 500
- Proposed design has a Level of service E/F in design year



## Recommendation #2

Delete planter strip on St. Johns in the vicinity of 33rd.



# Recommendation #3

Use Tight Diamond I/C over SR 500 at  
St. Johns



# Recommendation #3

Use Tight Diamond I/C over SR 500 at  
St. Johns



# Recommendation #4

Narrow 42nd Ave. overcrossing bridge

- 2 – 11 ft lanes
- 2 ft shoulder at east
- 5 ft bike lane at west
- 6.5 ft sidewalk at west
- Use existing pedestrian overcrossing to the east of 42nd



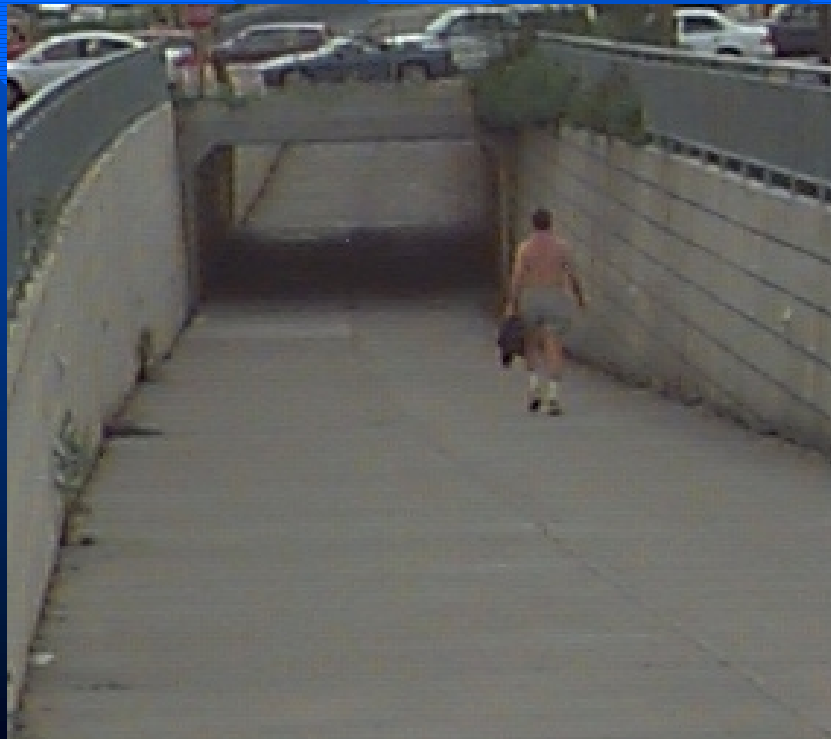
# Recommendation #5

## Grade separation with 3/4 I/C



## Recommendation #6

Provide Discovery Trail connectivity using a box culvert at current grade of St. Johns.



# Recommendation #7

Stage the work to build St. Johns I/C first, 54th Ave. second, and 42nd Ave. third.

# Lessons Learned



## ■ Estimate prices appear high

### – Structures

» Bridge \$120/sf VS \$100/sf

» MSE \$50/sf VS \$25/sf

» Project scope contingencies 25% VS 15%

# Lessons Learned continued



## ■ Benefits

- Disabling accidents were not identified in accident summary
- accident reduction factor was not applied

## ■ 42nd and 54th grades do not meet ADA standards

# Cost Estimates and Benefit/Cost


	Proposed Estimate	Proposed Benefits	Proposed B/C	Proposed Revised Estimate	Revised Benefits	Revised B/C	VE Recommended	VE B/C
St Johns	\$58,535,000	\$31,129,254	0.5	\$45,783,000	\$28,125,185	0.6	\$18,811,000	1.5
42nd & 54th	\$17,878,100	\$33,049,974	1.8	\$20,763,000	\$34,649,698	1.7	\$13,391,000	2.6
Added Items	\$450,000			\$450,000			\$450,000	
Total Project	\$76,863,100	\$64,179,228	0.8	\$66,996,000	\$62,774,883	0.9	\$32,652,000	1.9

# Cost Comparison Summary

- Recommendation #1: Auxiliary Lane  
**Increase \$ 250,000**
- Recommendation #2: Remove Planter Strip  
**Potential savings \$ 1.2M**
- Recommendation #3: Tight Diamond at St. Johns  
**Potential savings \$ 25.7M**
- Recommendation #4: Narrow 42nd Ave Bridge  
**Potential savings \$ 2 M**

# Cost Comparison Summary continued

- Recommendation #5: 3/4 I/C at 54th  
**Potential savings \$ 4.5 M**
- Recommendation #6 Bike Tunnel  
**Increase of \$ 200,000**
- Recommendation #7: Project Staging  
**Nonquantifiable dollar and time savings.**



Full implementation of the VE recommendations has the potential of reducing the project budget by \$34.3 million off of the revised estimate and \$44.2 million off of the original estimate.

